

Application Serial No. 10/519,249
Reply to Office Action of April 4, 2006

SEP 13 2006

PATENT
Docket: CU-4032

Amendments To The Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. - 16 (cancelled)

17. (new) A device for protecting a fiber line against destruction by laser radiation comprising:

a section of an optical fiber having two portions, each portion of said two portions having a cladding that is of a first diameter, said optical fiber also having a cladded, reduced-diameter portion between said two portions, the cladded reduced-diameter portion having at least one part of length $L \geq 10 \times D$ that has a cross-section diameter parameter d that is within the range $D < d \leq \min(4 \times D, 40 \mu\text{m})$, where D is a mode field diameter and wherein the cladded reduced-diameter portion is formed directly in said section so that a fiber core within the section of optical fiber has a constant diameter throughout said two portions and said cladded reduced-diameter portion.

18. (new) The device according to claim 17, wherein said cladding is made of silica based glass.

19. (new) The device according to claim 17, wherein said cladded reduced-diameter-portion is formed in situ in the fiber line to be protected.

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20. (new) The device according to claim 17, wherein the cladded reduced-diameter portion is fabricated by etching.

21. (new) The device according to claim 17, wherein the cladding of the cladded reduced-diameter portion is coaxial with the fiber core.

22. (new) The device according to claim 17, wherein said optical fiber section is connected into a fiber line by optical connectors.

23. (new) The device according to claim 17, wherein said optical fiber section is connected into a fiber line by splicing.

24. (new) A device for protecting a fiber line against destruction by laser radiation comprising:

a section of an optical fiber line having first and second portions, each of the first and second portions having an optical fiber cladding that has an identical diameter and a circumferential groove in the cladding between said portions, the groove having a width no less than $10 \times D$ and a depth so that a cladding diameter is in the range of D to $\min(4 \times D, 40 \mu\text{m})$, where D is mode field diameter; wherein the groove is formed directly in said section so that a fiber core has a constant diameter throughout said section.

25. (new) The device according to claim 24, wherein said optical fiber cladding is made of silica based glass.

26. (new) The device according to claim 24, wherein said groove is formed in situ in the fiber line to be protected.

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27. (new) The device according to claim 24, wherein said groove is fabricated by etching.

28. (new) The device according to claim 24, wherein said optical fiber section is connected into a fiber line to be protected by optical connectors.

29. (new) The device according to claim 24, wherein said optical fiber section is connected into a fiber line to be protected by splicing.